

**FOUR-PORT WAVELENGTH-SELECTIVE CROSSBAR SWITCHES (4WCS)  
USING RECIPROCAL WDMS AND OPTICAL CIRCULATOR COMBINATION**

**ABSTRACT OF THE DISCLOSURE**

A four-port wavelength-selective crossbar switch generates an add/drop wavelength signal from a wave division multiplexed (WDM) signal using a plurality of double-sided reflectors that selectively reflects a selected wavelength channel signal of the WDM signal through optical circulators to provide low crosstalk between the dropped and added wavelength signals. The switch also reduces the number of WDM MUX-DEMUX required to one half that compared to a traditional approach. Furthermore, the switch can be designed to be wavelength cyclic with individual free spectral ranges that can be independently set to either through or add/drop states.